WHAT IS CLAIMED IS:

1.   A method for initializing a substantially continuous analyte sensor, the method comprising:

receiving a data stream from an analyte sensor, including one or more sensor data points;

receiving reference data from a reference analyte monitor, including two or more reference data points;

providing at least two matched data pairs by matching reference analyte data to substantially time corresponding sensor data;

forming a calibration set including said at least two matching data pairs; and

determining a stability of the continuous analyte sensor.

2.   The method of claim 1, wherein the step of determining the stability of the substantially continuous analyte sensor comprises waiting a predetermined time period between about one minute and about six weeks.

3.   The method of claim 1, wherein the step of determining the stability of the substantially continuous analyte sensor comprises evaluating at least two matched data pairs.

4.   The method of claim 1, wherein the step of determining the stability of the substantially continuous analyte sensor comprises evaluating one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

5.   The method of claim 1, further comprising providing one of an audible, visual, or tactile output to a user based on the stability of said sensor.

6.   The method of claim 5, wherein the step of providing output based on the stability of said sensor comprises indicating at least one of a numeric estimated analyte value, a directional trend of analyte concentration, and a graphical representation of an estimated analyte value.

7.   The method of claim 1, wherein the step of receiving sensor data comprises receiving sensor data from a substantially continuous glucose sensor.

8.   The method of claim 1, wherein the step of receiving sensor data comprises receiving sensor data from an implantable glucose sensor.

9.   The method of claim 1, wherein the step of receiving sensor data comprises receiving sensor data from subcutaneously implantable glucose sensor.

10.   The method of claim 1, wherein the step of receiving reference data comprises receiving reference data from a self-monitoring blood glucose test.

11.   The method of claim 1, wherein the step of receiving reference data comprises downloading reference data via a cabled connection.

12.   The method of claim 1, wherein the step of receiving reference data comprises downloading reference data via a wireless connection.

13.   The method of claim 1, wherein the step of receiving reference data from a reference analyte monitor comprises receiving within a receiver internal communication from a reference analyte monitor integral with said receiver.

14.   The method of claim 1, wherein the step of forming a calibration set includes evaluating at least one matched data pair using inclusion criteria.

15.   The method of claim 1, wherein the step of receiving sensor data comprises receiving sensor data that has been algorithmically smoothed.

16.   The method of claim 1, wherein the step of receiving sensor data comprises algorithmically smoothing said received sensor data.

17.   The method of claim 1, wherein the step of forming a calibration set comprises including in said calibration set between one and six matched data pairs.

18.   The method of claim 1, wherein the step of forming a calibration set comprises including six matched data pairs.

19.   The method of claim 1, wherein the step of forming a calibration set further comprises determining a value for n, where n is greater than one and represents the number of matched data pairs in the calibration set.

20.   The method of claim 19, wherein the step of determining a value for n is determined as a function of the frequency of the received reference data points and signal strength over time.

21.   A system for initializing a continuous analyte sensor, comprising:

a sensor data module operatively connected to a continuous analyte sensor that receives a data stream comprising a plurality of time spaced sensor data points from the analyte sensor;

a reference input module adapted to obtain reference data from a reference analyte monitor, including one or more reference data points;

a processor module that forms one or more matched data pairs by matching reference data to substantially time corresponding sensor data and subsequently forms a calibration set including said one or more matched data pairs; and

a start-up module associated with said processor module programmed to determine the stability of the continuous analyte sensor.

22.   The system of claim 21, wherein the sensor data module is adapted to wirelessly receive sensor data points from said sensor.

23.   The system of claim 21, wherein said start-up module is programmed to wait a predetermined time period between six hours and six weeks.

24.   The system of claim 21, wherein said start-up module is programmed to evaluate at least two matched data pairs.

25.   The system of claim 21, wherein said start-up module is programmed to evaluate one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

26.   The system of claim 21, further comprising an output control module associated with said processor module and programmed to control output of sensor data.

27.   The system of claim 26, wherein said output control module indicates at least one of a numeric estimated analyte value, a directional trend of analyte concentration, and a graphical representation of an estimated analyte value.

28.   The system of claim 21, wherein said sensor data module is configured to receive sensor data from substantially the continuous glucose sensor.

29.   The system of claim 21, wherein said sensor data module is configured to receive sensor data from an implantable glucose sensor.

30.   The system of claim 21, wherein said sensor data module is configured to receive sensor data from subcutaneously implantable glucose sensor.

31.   The system of claim 21, wherein said reference input module is configured to receive reference data from a self-monitoring blood glucose test.

32.   The system of claim 21, wherein said reference input module is configured to download reference data via a cabled connection.

33.   The system of claim 21, wherein said reference input module is configured to download reference data via a wireless connection.

34.   The system of claim 21, further comprising a reference analyte monitor integral with the system and wherein said reference input module is configured to receive an internal communication from the reference analyte monitor.

35.   The system of claim 21, wherein said processor module comprises programming to evaluate at least one matched data pair using inclusion criteria.

36.   The system of claim 21, wherein said reference input module is configured to receive sensor data that has been algorithmically smoothed.

37.   The system of claim 21, wherein said reference input module is configured to algorithmically smooth said received sensor data.

38.   The system of claim 21, wherein said calibration set comprises between one and six matched data pairs.

39.   The system of claim 21, wherein said calibration set comprises six matched data pairs.

40.   The system of claim 21, wherein said calibration set comprises n matched data pairs, where n is greater than one.

41.   The system of claim 40, wherein n is a function of the frequency of the received reference data points and signal strength over time.

42.   A computer system for initializing a continuous analyte sensor, the computer system comprising:

        a sensor data receiving module that receives sensor data from the substantially continuous analyte sensor via a receiver, including one or more sensor data points;

        a reference data receiving module that receives reference data from a reference analyte monitor, including one or more reference data points;

a data matching module that forms one or more matched data pairs by matching reference data to substantially time corresponding sensor data;

a calibration set module that forms a calibration set including at least one matched data pair; and

a stability determination module that determines the stability of the continuous analyte sensor.

43. The computer system of claim 42, wherein said stability determination module comprises a system for waiting a predetermined time period.

44. The computer system of claim 42, wherein said stability determination module evaluates at least two matched data pairs.

45. The computer system of claim 42, wherein said stability determination module evaluates one of pH, oxygen, hypochlorite, interfering species, correlation of matched pairs, R-value, baseline drift, baseline offset, and amplitude.

46. The computer system of claim 42, further comprising an interface control module that provides output to the user based on the stability of said sensor.

47. The computer system of claim 46, wherein said output from said interface control module comprises at least one of a numeric estimated analyte value, an indication of directional trend of analyte concentration, and a graphical representation of an estimated analyte value.

48. The computer system of claim 42, wherein said reference data receiving module is adapted to receive sensor data from a substantially continuous glucose sensor.

49. The computer system of claim 42, wherein said reference data receiving module is adapted to receive sensor data from an implantable glucose sensor.

50. The computer system of claim 42, wherein said reference data receiving module is adapted to receive sensor data from a subcutaneously implantable glucose sensor.

51. The computer system of claim 42, wherein said reference data receiving module is adapted to receive sensor data from a self-monitoring blood glucose test.

52. The computer system of claim 42, wherein said reference data receiving module is adapted to receive sensor data from a cabled connection.

53. The computer system of claim 42, wherein said reference data receiving module is adapted to download reference data via a wireless connection.

54. The computer system of claim 42, wherein said reference data receiving module is adapted to receive reference data from an internal reference analyte monitor that is housed integrally said computer system.

55. The computer system of claim 42, wherein said calibration set module evaluates at least one matched data pair using inclusion criteria.

56. The computer system of claim 42, wherein said sensor data receiving module is adapted to receive sensor data that has been algorithmically smoothed.

57. The computer system of claim 42, further comprising a data smoothing module that smoothes said received sensor data.

58. The computer system of claim 42, wherein said calibration set module comprises between one and six matched data pairs.

59. The computer system of claim 42, wherein said calibration set module comprises six matched data pairs.

60. The computer system of claim 42, wherein the calibration set comprises n number of matched data pairs, where n is greater than one.

61. The computer system of claim 60, wherein n is a function of the frequency of the received reference data points and signal strength over time.

62. A method for initializing a substantially continuous analyte sensor, the method comprising:

receiving sensor data from a substantially continuous analyte sensor, including one or more sensor data points;

receiving reference data from a reference analyte monitor, including one or more reference data points;

forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data;

forming a calibration set including at least one matched data pair;

determining stability of continuous analyte sensor; and

outputting information reflective of said sensor data once a predetermined level of stability has been determined.

63. A system for initializing a continuous analyte sensor, comprising:

a sensor data module operatively linked to a continuous analyte sensor and configured to receive one or more sensor data points from said sensor;

a reference input module adapted to obtain one or more reference data points; and

a processor module associated with the sensor data module and the input module and programmed to match reference data points with time-matched sensor data points to form a calibration set comprising at least one matched data pair; and

a start-up module associated with said processor module programmed to determine the stability of the continuous analyte sensor and output information reflective of said sensor data once a predetermined level of stability has been determined.

64. A computer system for initializing a continuous analyte sensor, the system comprising:

a sensor data receiving module that receives sensor data including one or more sensor data points from the substantially continuous analyte sensor via a receiver;

a reference data receiving module for receiving reference data from a reference analyte monitor, including one or more reference data points;

a data matching module for forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data;

a calibration set module for forming a calibration set including at least one matched data pair;

a stability determination module for evaluating the stability of the continuous analyte sensor; and

an interface control module that outputs information reflective of said sensor data once a predetermined level of stability has been determined.

65. A method for initializing a glucose sensor, the method comprising:

receiving sensor data from the glucose sensor, including one or more sensor data points;

receiving reference data from a reference glucose monitor, including one or more reference data points;

forming one or more matched data pairs by matching reference data to substantially time corresponding sensor data;

determining whether the glucose sensor has reached a predetermined level of stability.

66. A system for initializing a continuous analyte sensor, comprising:

a sensor data module operatively linked to a continuous analyte sensor and configured to receive one or more sensor data points from said sensor;

a reference input module adapted to obtain one or more reference data points; and

a processor module associated with the sensor data module and the input module and programmed to match reference data points with time-matched sensor data points to form a calibration set comprising at least one matched data pair; and

a stability module associated with said processor module programmed to determine the stability of the continuous analyte sensor.